

**Bonneville Power Administration**

**Conservation**

**RESOURCE ENERGY DATA**

**The RED Book**

**Fiscal Year 2006**

**(Published 2007)**

(Blank page for double-sided printing)

# Table of Contents

<b>Introduction .....</b>	<b>3</b>
<b>Purpose .....</b>	<b>3</b>
<b>RED Book Layout .....</b>	<b>3</b>
<b>Important Note .....</b>	<b>4</b>
<b>Overview .....</b>	<b>5</b>
<b>BPA’S Total Historical Conservation Savings .....</b>	<b>6</b>
<b>Current Conservation Programs .....</b>	<b>8</b>
<b>BPA’S Historical Conservation Savings FY 1982 - FY 2000.....</b>	<b>16</b>
<b>Total BPA Conservation Costs.....</b>	<b>17</b>
NOTES ON TABLES D & E: .....	21
GLOSSARY.....	23

## List of Figures

<b>FIGURE 1: BPA's Cumulative Total Adjusted Conservation Savings by Sector FY 1982 - 2006.....</b>	<b>5</b>
<b>FIGURE 2: BPA'S Cumulative Adjusted Conservation Savings (aMW) by Sectors FY 1982 - 2006 .....</b>	<b>6</b>
<b>FIGURE 3: Current Conservation Programs - Cumulative aMW Savings (FY 2001 - 2006) .....</b>	<b>9</b>
<b>FIGURE 4: Current Conservation Programs - aMW Savings FY 2001 - 2006</b>	<b>9</b>
<b>FIGURE 5: Current Conservation Programs - Annual Incremental aMW (FY 2001 - 2006) .....</b>	<b>10</b>
<b>FIGURE 6: Historical Conservation Programs aMW Savings FY 1982 - 2000 .....</b>	<b>13</b>

## List of Tables

<b>TABLE A: BPA's TOTAL CONSERVATION SAVINGS --- (FY 1982 - 2006).....</b>	<b>7</b>
<b>TABLE B: BPA's CURRENT CONSERVATION SAVINGS BY PROGRAM (FY 2001 - 2006) Incremental aMW .....</b>	<b>11</b>
<b>TABLE C: BPA's CONSERVATION SAVINGS (aMW) FY 1982-2000 .....</b>	<b>14</b>
<b>TABLE D: Total BPA Conservation Costs Dollars (\$000's) .....</b>	<b>18</b>
<b>TABLE E: BPA Energy Conservation Costs 1982 - 2000 Dollars (\$000's) ..</b>	<b>20</b>

**Bonneville Power Administration**  
**Conservation**  
**RESOURCE ENERGY DATA**  
**(RED Book)**

## **Introduction**

On December 5, 1980, the 96<sup>th</sup> Congress passed the Pacific Northwest Electric Power Planning and Conservation Act (Act), Public Law 96-501. The overall purpose of the Act is:

- “To assist the electrical consumers of the Pacific Northwest through use of the Federal Columbia River Power System to achieve cost-effective energy conservation;
- To encourage the development of renewable energy resources;
- To establish a representative regional power planning process;
- To assure the region of an efficient and adequate power supply; and
- For other purposes.”

The Bonneville Power Administration (BPA), in compliance with the Act, has sponsored and funded various energy conservation programs for the benefit of the Pacific Northwest consumers for the past quarter of a century. These programs have been successful due to the cooperation and assistance of BPA’s electric utility customers.

## **Purpose**

The RED Book summarizes data on cost and savings pertaining to the BPA energy conservation acquisition programs and resources. The document provides information and references for general audiences and for use in preparing general publications.

## **RED Book Layout**

The RED Book consists of five parts.

- Part 1. Provides the reader with information on the total conservation savings from 1982 through 2006;
- Part 2. Presents information on current conservation programs from 2001 through 2006;
- Part 3. Offers information on the historical conservation achievements for the period 1982 through 2000;
- Part 4. Presents expended dollars in a table format; and
- Part 5. Lists definitions of the terms used within the text and tables of the document.

## Important Note

This information is sensitive to seemingly unimportant changes in the assumptions surrounding it. ***Use data with care*** to ensure that the correct characterizations of the monetary and energy figures are communicated.

The RED Book information is presented to the nearest tenth of an average megawatt (aMW) in most of the tables. Information in the charts and graphs *is rounded to the nearest 5 aMW*. When presenting this information to the public, BPA recommends using “rounded” numbers because we recognize that these data are not precise and are subject to adjustment over time. Prior to each support table a narrative is presented.

Data in the RED Book are as reported on January 25, 2007, for BPA’s fiscal year (FY) 2006\*. These data should be used as “official data” until the FY 2007 RED Book is published. Adjustments to data are captured annually in the RED Book if information from evaluations or other sources indicate savings estimates should be changed. Also, dollar amounts may change from one year to the next due to revised utility reports.

If you have any questions about how to represent or use this information, please call one of the individuals below:

Kevin O’Sullivan (503) 230-3693

Grant Vincent (503) 230-5499

---

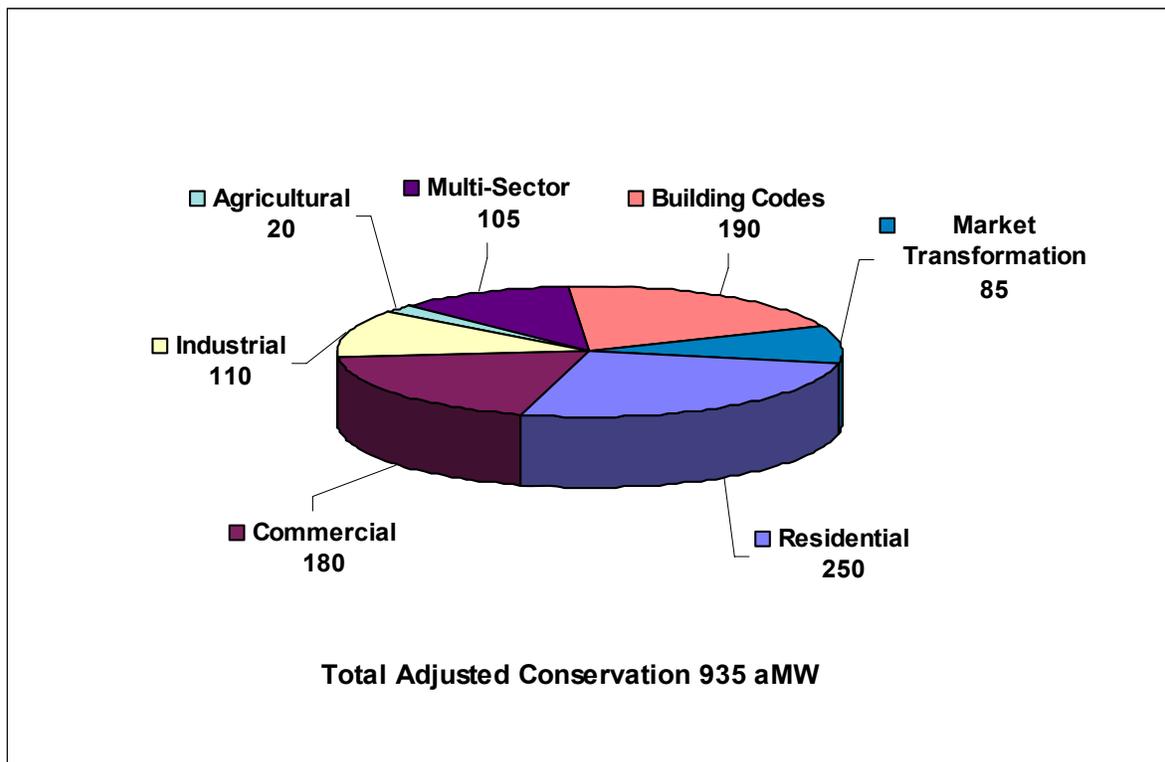
\* BPA’s fiscal year runs from October 1 through September 30.

## Overview

Bonneville Power Administration (BPA) estimates a total of 935 average megawatts (aMW) of energy savings are currently delivered to the Pacific Northwest region from BPA-funded conservation programs during the past 25 years (FY 1982 – 2006). This cumulative total includes adjustments to some of the incremental energy savings reported in previous editions of the RED Book. These adjustments account for: changes in the reported number of installed conservation measures in previous fiscal years; changes in estimated energy savings for certain measures based on subsequent program evaluations; and installed measures that have “expired” or are no longer delivering energy savings. For example, energy savings from the Conservation Modernization (ConMod) legacy program (see glossary) are not included in the current total due to the economic downturn of the aluminum industry.

Figure 1 illustrates the relative contributions from various sector and program categories towards BPA’s cumulative total adjusted energy savings.

**FIGURE 1: BPA’s Cumulative Total Adjusted Conservation Savings by Sector<sup>1</sup> FY 1982 - 2006**



<sup>1</sup> All numbers are rounded to the nearest 5 aMW. The sum of the sector aMW may not equal the total aMW due to rounding. Prior to the April 2004 edition of the RED Book, this graph also included savings from the ConMod program. ConMod savings are not included in the current total because the Region is no longer receiving conservation benefits from the aluminum industry.

The sector-specific contributions to BPA’s cumulative total adjusted conservation savings (rounded to the nearest 5 aMW) are:

- Residential Sector: 380 aMW  
*(includes 130 aMW from residential building codes)*
- Commercial Sector: 240 aMW  
*(includes 60 aMW from commercial building codes);*
- Industrial Sector: 110 aMW
- Agricultural Sector: 20 aMW
- Multisector: 105 aMW  
*(e.g. Billing Credits, Competitive Acquisitions, Flex Agreements, etc.)*
- Market Transformation: 85 aMW.

## BPA’S Total Historical Conservation Savings

Figure 2 illustrates the yearly contributions from each sector towards BPA’s cumulative total adjusted savings over the 25-year history of BPA’s conservation programs (FY 1982 – 2006).

**FIGURE 2<sup>2</sup>: BPA'S Cumulative Adjusted Conservation Savings (aMW) by Sectors FY 1982 - 2006**

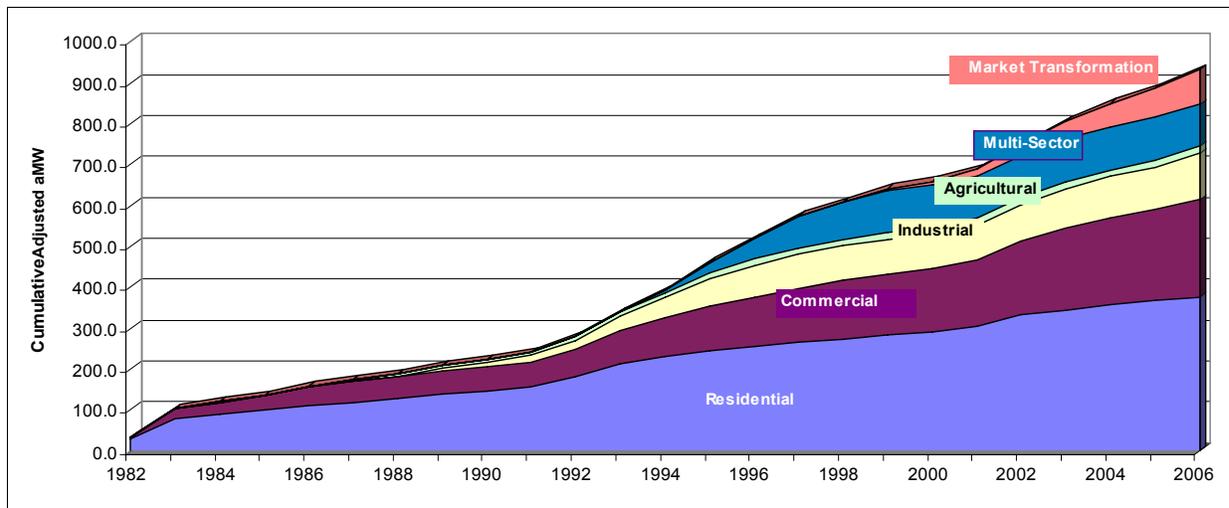


Table A summarizes incremental energy savings for FY 1982 - 1994 and incremental energy savings for each fiscal year between 1995 and 2006. The numbers in the columns for 1982 through 2005 are the same as reported in previous editions of the RED Book, except for minor increases in agricultural sector savings in FY 2002 - 2005. The Adjustment column shows the total amount of adjustments to previously-reported savings.

<sup>2</sup> ConMod savings have been removed from the graph. The region no longer receives conservation savings from the aluminum industry due to the economic downturn of the industry.

**TABLE A: BPA's TOTAL CONSERVATION SAVINGS<sup>3-4-5-6</sup> (FY 1982 – 2006)**  
**Incremental aMW**

	FY 82-94	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	SubTotal FY 82-06	Adjustment FY 82-06	Total FY 82-06
Residential	172.6	3.4	1.4	0.6	0.7	0.6	0.3	6.5	20.2	11.4	9.8	10.5	10.1	248.2	0.2	248.4
Commercial	92.5	9.3	5.3	4.8	6.8	0.5	0.0	2.1	14.3	17.5	11.7	9.5	14.3	188.6	(10.0)	178.6
Industrial	53.4	18.2	11.8	6.7	0.2	0.2	0.0	0.4	4.3	6.8	4.9	3.4	8.4	118.7	(7.1)	111.6
Agricultural	17.6	3.0	0.6	0.0	0.0	0.2	0.0	5.2	2.8	3.5	2.9	2.0	0.7	38.5	(19.0)	19.5
Multi-Sector	6.3	20.1	23.6	27.9	12.9	13.4	0.0	0.0	0.2	0.2	0.2	0.1	0.2	105.1	0.0	105.1
<b>Incremental Total</b>	<b>342.4</b>	<b>54.0</b>	<b>42.7</b>	<b>40.0</b>	<b>20.6</b>	<b>14.9</b>	<b>0.3</b>	<b>14.2</b>	<b>41.8</b>	<b>39.5</b>	<b>29.5</b>	<b>25.5</b>	<b>33.7</b>	<b>699.1</b>	<b>(35.9)</b>	<b>663.2</b>
Con/Mod	95.9	-	-	-	-	-	-	-	-	-	-	-	-	95.9	(95.9)	0.0
<b>Incremental Total with Con/Mod</b>	<b>438.3</b>	<b>54.0</b>	<b>42.7</b>	<b>40.0</b>	<b>20.6</b>	<b>14.9</b>	<b>0.3</b>	<b>14.2</b>	<b>41.8</b>	<b>39.5</b>	<b>29.5</b>	<b>25.5</b>	<b>33.7</b>	<b>795.0</b>	<b>(131.8)</b>	<b>663.2</b>
<b>Load Reductions from Improved Building Codes:</b>																
Residential	59.0	10.3	8.7	8.8	8.2	8.2	8.4	8.3	8.7	-	-	-	-	128.6	0.0	128.6
Commercial	10.8	4.6	5.9	6.5	4.9	6.2	4.5	4.1	4.3	4.2	3.9	-	-	59.9	0.0	59.9
<b>Incremental Total</b>	<b>69.8</b>	<b>14.9</b>	<b>14.6</b>	<b>15.3</b>	<b>13.1</b>	<b>14.4</b>	<b>12.9</b>	<b>12.4</b>	<b>13.0</b>	<b>4.2</b>	<b>3.9</b>	<b>0.0</b>	<b>0.0</b>	<b>188.5</b>	<b>0.0</b>	<b>188.5</b>
Market Transformation	-	-	-	-	-	4.0	5.0	7.0	12.0	16.0	14.0	17.0	11.9	86.9	(3.0)	83.9
<b>Incremental Total with Load Reductions and Market Transformation</b>	<b>508.1</b>	<b>68.9</b>	<b>57.3</b>	<b>55.3</b>	<b>33.7</b>	<b>33.3</b>	<b>18.2</b>	<b>33.6</b>	<b>66.8</b>	<b>59.7</b>	<b>47.4</b>	<b>42.5</b>	<b>45.6</b>	<b>1070.4</b>	<b>(134.8)</b>	<b>935.6</b>

<sup>3</sup> Includes transmission line loss credit savings.

<sup>4</sup> The savings achieved related to irrigation scheduling are not included in the total column. These are one year savings and do not carry over to other years.

<sup>5</sup> Market Transformation includes only BPA's share and not regional market transformation savings.

<sup>6</sup> The numbers may not agree when added vertically and horizontally due to rounding effects and irrigation savings (see Footnote 4).

## Current Conservation Programs

In 2001 BPA offered new conservation programs to utility customers under the Conservation Augmentation (ConAug) and the Conservation & Renewables Discount (C&RD) Programs. Early acceptance by a few utilities provided energy savings for those programs in the summer of 2001 prior to the program official start in FY 2002. In addition, the State Low-Income Weatherization Program is funded by BPA for the states of Oregon, Washington, Idaho and Montana. Market Transformation continues to be a viable energy savings opportunity for the region. There are building code savings through FY 2004 that account for savings within the region. BPA only reports savings that are achieved within its service territory.

In 2006 BPA began the transition from ConAug and C&RD to new conservation opportunities under Conservation Acquisition Agreements (CAA) and Conservation Rate Credit (CRC) initiatives. Also included in the 2002 - 2006 data are the results of the Irrigation Rate Mitigation Product (IRMP). The IRMP numbers are trued up at the end of each rate period and, therefore, only reported approximately every four years.

Figure 3 is a representation of the cumulative effect of the post 2000 conservation programs. Cumulative savings are:

- ConAug: 95 aMW;
- C&RD: 65 aMW;
- State Low Income Weatherization Program: 2 aMW;
- Market Transformation: 75 aMW;
- Building Codes: 35 aMW.
- CAA: 1 aMW;
- CRC: 1 aMW;
- Savings with a Twist (SWAT): 3 aMW; and
- IRMP: 3 aMW.

Total savings achieved during the period 2001 through 2006 is 275 aMW.

**FIGURE 3: Current Conservation Programs - Cumulative aMW Savings (FY 2001 – 2006)**

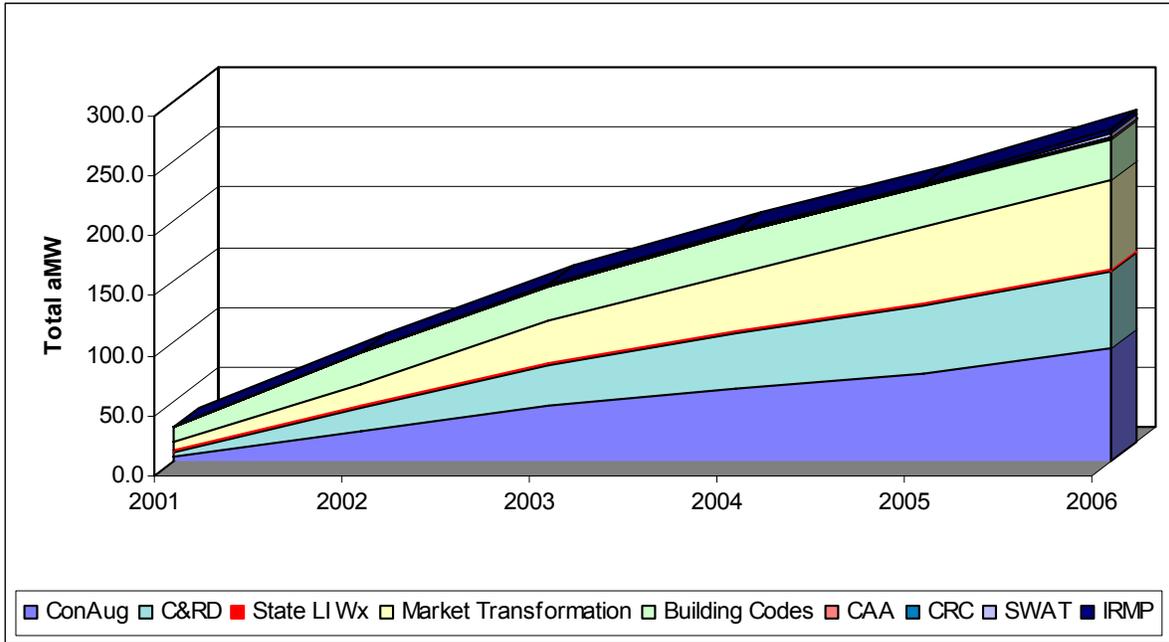


Figure 4 depicts annual energy savings attained by the current conservation programs for fiscal years 2001 through 2006.

**FIGURE 4: Current Conservation Programs - aMW Savings FY 2001 - 2006**

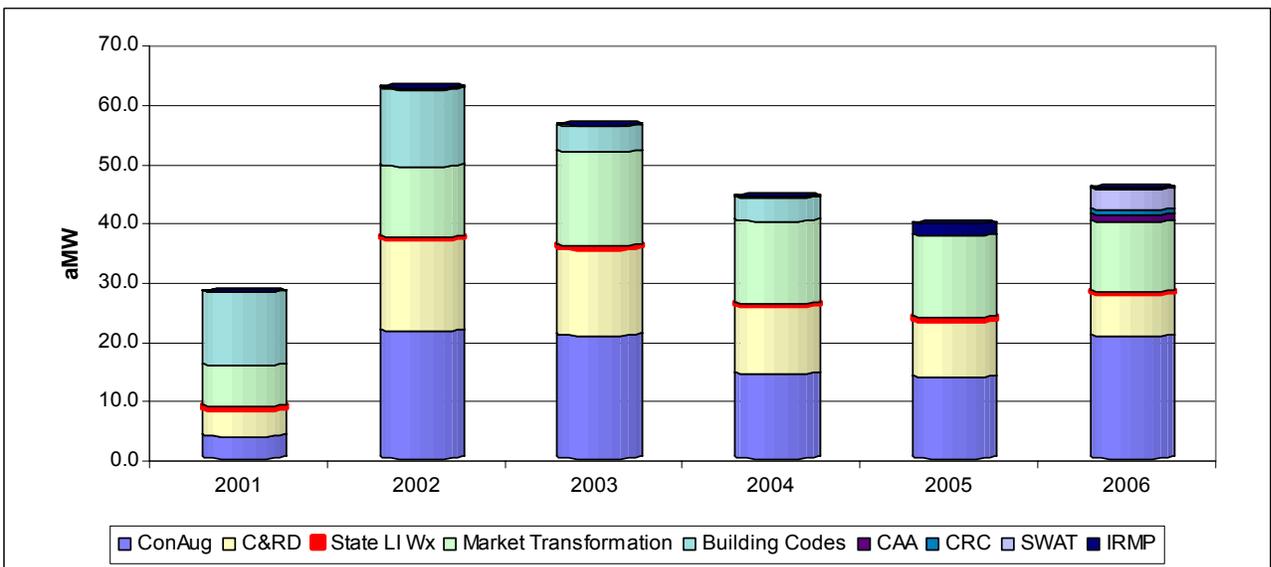


Figure 5 represents the annual acquisition within each market sector for the current programs.

**FIGURE 5: Current Conservation Programs - Annual Incremental aMW (FY 2001 – 2006)**

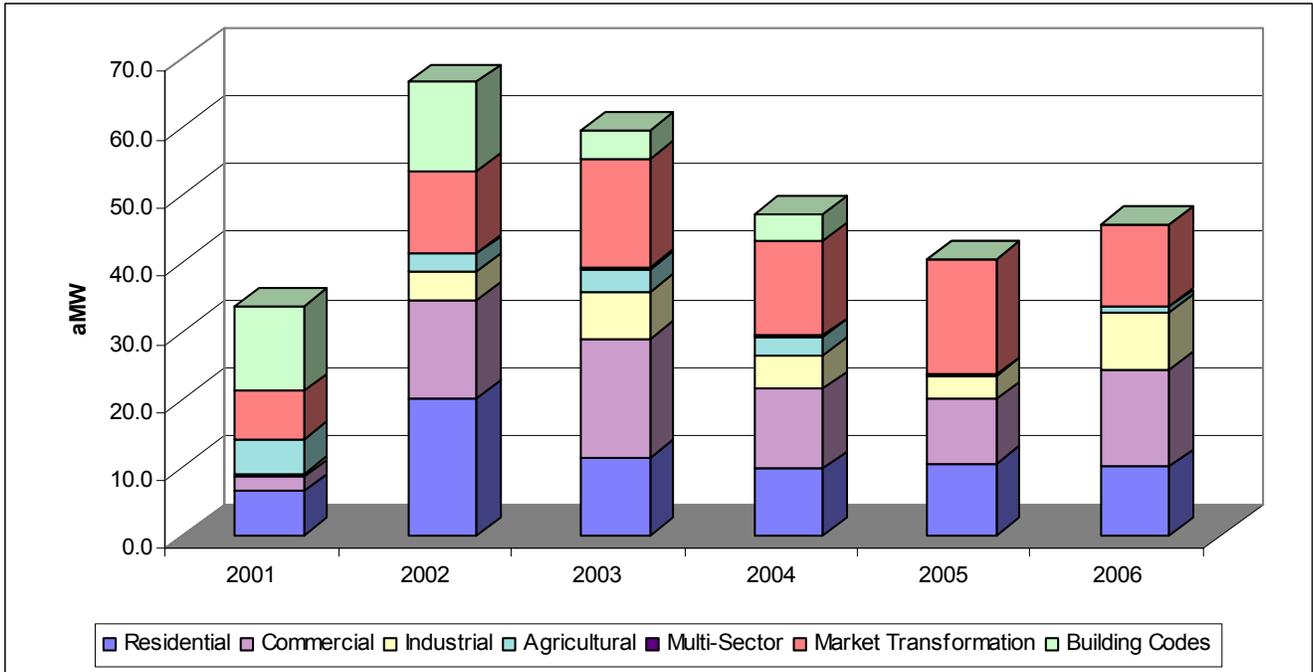


Table B provides information on total incremental energy savings for 2001 through 2006. Adjustments to the savings occur on an annual basis. These adjustments are a result of evaluations performed or revised reports submitted by utilities for previous years.

**TABLE B: BPA's CURRENT CONSERVATION SAVINGS BY PROGRAM  
(FY 2001 - 2006) Incremental aMW <sup>7</sup>**

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Adjust- ment	TOTAL FY 01-06
<b>RESIDENTIAL</b>								
Low Income Residential Weatherization (States)	0.4	0.3	0.4	0.3	0.3	0.3	0.1	2.1
C&RD Low Income Weatherization	0.0	0.2	0.2	0.2	0.2	0.1	0.0	0.9
CRC Low Income Weatherization	-	-	-	-	-	0.0	0.0	0.0
<i>Conservation Augmentation (ConAug)</i>								
CFL Program	1.8	4.6	-	-	-	-	(1.9)	4.5
IRLC	0.7	2.6	2.4	1.8	1.7	1.8	(0.1)	10.9
<b>TOTAL RESIDENTIAL CONAUG</b>	<b>2.5</b>	<b>7.2</b>	<b>2.4</b>	<b>1.8</b>	<b>1.7</b>	<b>1.8</b>	<b>(2.0)</b>	<b>15.4</b>
<i>Conservation Renewable Discount (C&amp;RD)</i>	3.6	12.5	8.4	7.5	8.3	3.9	2.1	46.3
<i>Conservation Acquisition (CAA)</i>	-	-	-	-	-	0.2	0.0	0.2
<i>Conservation Rate Credit (CRC)</i>	-	-	-	-	-	0.4	0.0	0.4
<i>Savings with a Twist (SWAT)</i>	-	-	-	-	-	3.4	0.0	3.4
<b>RESIDENTIAL TOTAL</b>	<b>6.5</b>	<b>20.2</b>	<b>11.4</b>	<b>9.8</b>	<b>10.5</b>	<b>10.1</b>	<b>0.2</b>	<b>68.7</b>
<b>COMMERCIAL</b>								
<i>Conservation Augmentation</i>								
Federal	1.2	3.1	2.5	1.9	1.9	3.7	0.0	14.3
LSO & ESO	0.2	2.3	2.5	1.1	1.2	1.8	0.0	9.1
VendingMiser	0.2	1.1	0.3	-	-	-	0.0	1.6
C&I	0.0	0.2	0.5	0.2	0.7	1.0	0.0	2.6
IRLC	0.1	5.9	7.7	7.2	5.3	6.6	(0.4)	32.4
<b>TOTAL COMMERCIAL CONAUG</b>	<b>1.7</b>	<b>12.6</b>	<b>13.5</b>	<b>10.4</b>	<b>9.1</b>	<b>13.1</b>	<b>(0.4)</b>	<b>60.0</b>
<i>Conservation Renewable Discount (C&amp;RD)</i>	0.4	1.7	3.9	1.3	0.4	0.6	(2.0)	6.3
<i>Conservation Acquisition (CAA)</i>	-	-	-	-	-	0.4	0.0	0.4
<i>Conservation Rate Credit (CRC)</i>	-	-	-	-	-	0.2	0.0	0.2
<i>New Initiatives - Institutional Program</i>	-	-	0.1	0.0	-	-	0.0	0.1
<b>COMMERCIAL TOTAL</b>	<b>2.1</b>	<b>14.3</b>	<b>17.5</b>	<b>11.7</b>	<b>9.5</b>	<b>14.3</b>	<b>(2.4)</b>	<b>67.0</b>
<b>INDUSTRIAL</b>								
<i>Conservation Augmentation</i>								
Water/Wastewater	0.0	0.3	0.2	1.7	-	-	(1.5)	0.7
C&I	0.0	0.0	0.5	0.1	0.8	1.3	0.0	2.7
IRLC	0.0	3.2	4.4	1.7	2.0	4.2	(0.2)	15.3
<b>SUBTOTAL INDUSTRIAL CONAUG</b>	<b>0.0</b>	<b>3.5</b>	<b>5.1</b>	<b>3.5</b>	<b>2.8</b>	<b>5.5</b>	<b>(1.7)</b>	<b>18.7</b>
<i>Conservation Renewable Discount (C&amp;RD)</i>	0.4	0.8	1.7	1.4	0.6	2.6	0.2	7.7
<i>Conservation Acquisition (CAA)</i>	-	-	-	-	-	0.3	0.0	0.3
<i>Conservation Rate Credit (CRC)</i>	-	-	-	-	-	0.0	0.0	0.0
<b>INDUSTRIAL TOTAL</b>	<b>0.4</b>	<b>4.3</b>	<b>6.8</b>	<b>4.9</b>	<b>3.4</b>	<b>8.4</b>	<b>(1.5)</b>	<b>26.4</b>
<b>Agricultural</b>								
<i>Conservation Augmentation</i>								
Conservation Renewable Discount (C&RD)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Irrigation Rate Mitigation Product (IRMP)	5.2	2.5	3.3	2.7	0.1	0.1	(12.4)	1.5
Conservation Acquisition Agreements (CAA)	-	0.3	0.2	0.2	1.9	0.2	0.0	2.8
<i>Conservation Rate Credit (CRC)</i>	-	-	-	-	-	0.2	0.0	0.2
<i>Conservation Rate Credit (CRC)</i>	-	-	-	-	-	0.1	0.0	0.1
<b>AGRICULTURAL TOTAL</b>	<b>5.2</b>	<b>2.8</b>	<b>3.5</b>	<b>2.9</b>	<b>2.0</b>	<b>0.7</b>	<b>(12.4)</b>	<b>4.7</b>

**(Table B continued on next page.)**

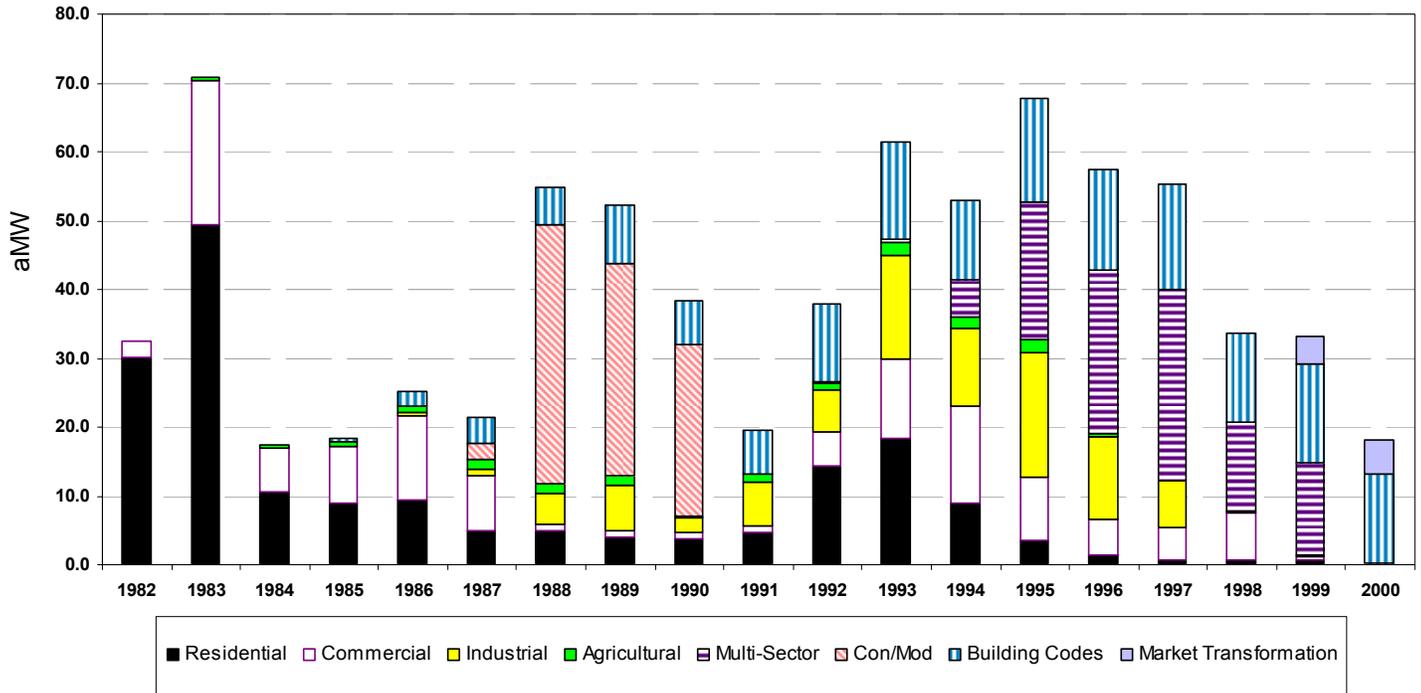
<sup>7</sup> Under the agricultural sector, irrigation scheduling projects have a one-year life cycle. Therefore, 19.0 aMW has been adjusted in order to exclude it from the total column.

**TABLE B, continued**

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Adjust- ment	TOTAL FY 01-06
<b>Multi-Sector</b>								
Conservation Augmentation	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Conservation Renewable Discount (C&RD)	0.0	0.2	0.2	0.2	0.1	0.0	(0.1)	0.6
<i>Conservation Rate Credit (CRC)</i>	-	-	-	-	-	0.2	0.0	0.2
<b>MULTI-SECTOR SUBTOTAL</b>	<b>0.0</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>0.0</b>	<b>0.9</b>
<b>TOTAL CONAUG</b>	<b>4.2</b>	<b>23.3</b>	<b>21.0</b>	<b>15.7</b>	<b>13.6</b>	<b>20.5</b>	<b>(4.0)</b>	<b>94.3</b>
<b>TOTAL C&amp;RD</b>	<b>9.6</b>	<b>17.9</b>	<b>17.7</b>	<b>13.3</b>	<b>9.7</b>	<b>7.3</b>	<b>(12.2)</b>	<b>63.3</b>
<b>TOTAL CAA</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.1</b>	<b>0.0</b>	<b>1.1</b>
<b>TOTAL CRC</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.0</b>	<b>0.9</b>
<b>BUILDING CODES</b>								
Residential	8.3	8.7	0.0	0.0	0.0	0.0	0.0	17.0
Commercial	4.1	4.3	4.2	3.9	0.0	0.0	0.0	16.5
<b>BUILDING CODES TOTAL</b>	<b>12.4</b>	<b>13.0</b>	<b>4.2</b>	<b>3.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>33.5</b>
<b>Market Transformation</b>	<b>7.0</b>	<b>12.0</b>	<b>16.0</b>	<b>14.0</b>	<b>17.0</b>	<b>11.9</b>	<b>(3.0)</b>	<b>74.9</b>
<b>TOTAL POST LEGACY CONSERVATION</b>	<b>33.60</b>	<b>66.80</b>	<b>59.55</b>	<b>47.40</b>	<b>42.50</b>	<b>45.60</b>	<b>(19.1)</b>	<b>276.4</b>

Figure 6 represents annual acquisition within each market sector.

**FIGURE 6<sup>8</sup>: Historical Conservation Programs aMW Savings FY 1982 - 2000**



<sup>8</sup> Multisector is a term used as a “pseudo sector” that makes no sector distinction for the savings achieved.

Table C provides information on historical programs for the period 1982 through 2000. Total energy savings achieved during this time period are 660 aMW.

**TABLE C: BPA's CONSERVATION SAVINGS (aMW) FY 1982-2000**

	Total FY 82-94	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	SubTotal FY 82-00	Adjustment FY 82-00	Total FY 82-00
<b>RESIDENTIAL</b>										
EXISTING:										
Weatherization-SF&MF	99.4	1.4	0.0	0.0	0.0	0.0	0.0	100.8	0.0	100.8
Weatherization-MH	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Low-Income Wx	0.0	0.0	0.5	0.3	0.4	0.6	0.3	2.1	0.0	2.1
NEW										
Super Good Cents	4.8	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	4.8
New Manuf. Homes	1.9	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	1.9
L/T Super Good Cents	1.9	0.5	0.4	0.2	0.2	0.0	0.0	3.2	0.0	3.2
Manuf. Hsg. Acq.(MAP)	6.3	1.1	0.4	0.0	0.0	0.0	0.0	7.8	0.0	7.8
Water Heater Wraps	30.4	0.0	0.0	0.0	0.0	0.0	0.0	30.4	0.0	30.4
Shower Flow Restrictors	9.1	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	9.1
Waterheat/sh-hds/aerators	18.7	0.4	0.1	0.1	0.1	0.0	0.0	19.4	0.0	19.4
<b>RES. SUBTOTAL</b>	<b>172.6</b>	<b>3.4</b>	<b>1.4</b>	<b>0.6</b>	<b>0.7</b>	<b>0.6</b>	<b>0.3</b>	<b>179.7</b>	<b>0.0</b>	<b>179.7</b>
<b>COMMERCIAL</b>										
LTNG. & WTR. HTNG.:										
Water Heater Wraps	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0
Shower Flow Restrictors	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
Lamps	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.7
Street & Area Lighting	16.9	0.0	0.0	0.0	0.0	0.0	0.0	16.9	0.0	16.9
INSTITUTIONAL BLDG.										
TAS's Tech Assist-Info.	7.6	0.0	0.0	0.0	0.0	0.0	0.0	7.6	(7.6)	0.0
ECM's	26.7	0.0	0.0	0.0	0.0	0.0	0.0	26.7	0.0	26.7
ACQUISITION SUPPORT										
Purch. of Energy Svngs.	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
Finance (CIPP)	3.2	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	3.2
PSP&L	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6
PECI - Comm/Ind Ltng.	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
CREUS End-use Study	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Energy Smart Design	28.5	8.0	4.6	2.1	2.2	0.1	0	45.5	0.0	45.5
Targeted Acq. (TAP)	3.0	0.5	0.5	2.7	4.6	0.4	0	11.7	0.0	11.7
ODOE - Schools	0.1	0.8	0.2	0.0	0.0	0.0	0.0	1.1	0.0	1.1
<b>COM. SUBTOTAL</b>	<b>92.5</b>	<b>9.3</b>	<b>5.3</b>	<b>4.8</b>	<b>6.8</b>	<b>0.5</b>	<b>0.0</b>	<b>119.2</b>	<b>(7.6)</b>	<b>111.6</b>
<b>INDUSTRIAL</b>										
Sponsor-Designed	9.7	0.0	0.0	0.0	0.0	0.0	0.0	9.7	(5.6)	4.1
Energy Savings Plan	31.3	16.9	9.8	3.6	0.2	0.0	0.0	61.8	0.0	61.8
Major Plants	12.4	1.3	2.0	3.1	0.0	0.2	0.0	19.0	0.0	19.0
<b>IND. SUBTOTAL</b>	<b>53.4</b>	<b>18.2</b>	<b>11.8</b>	<b>6.7</b>	<b>0.2</b>	<b>0.2</b>	<b>0.0</b>	<b>90.5</b>	<b>(5.6)</b>	<b>84.9</b>
<b>AGRICULTURAL</b>										
Irrigation Hardware	12.4	1.8	0.6	0.0	0.0	0.0	0.0	14.8	0.0	14.8
Irrigation Scheduling	5.2	1.2	0.0	0.0	0.0	0.2	0.0	6.6	(6.6)	0.0
<b>AG. SUBTOTAL</b>	<b>17.6</b>	<b>3.0</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>21.4</b>	<b>(6.6)</b>	<b>14.8</b>

*(Table C continued on next page)*

**TABLE C, continued**

	<b>Total FY 82-94</b>	<b>FY 1995</b>	<b>FY 1996</b>	<b>FY 1997</b>	<b>FY 1998</b>	<b>FY 1999</b>	<b>FY 2000</b>	<b>TOTAL FY 82-00</b>	<b>Adjustment FY 82-00</b>	<b>Total FY 82-00</b>
<b>MULTI-SECTOR</b>										
Billing Credits	1.0	0.5	0.6	0.3	0.0	0.0	0.0	2.4	0.0	2.4
Competitive Acquisition	0.1	0.6	0.0	0.1	0.1	1.1	0.0	2.0	0.0	2.0
BPA Sys Efficiencies	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.7
Third-Party Financing	4.9	10.3	12.4	18.1	6.8	4.8	0.0	57.3	0.0	57.3
Flex Agreements	0.0	8.3	10.6	9.4	6.0	7.5	0.0	41.8	0.0	41.8
<b>MULTI-S. SUBTOTAL</b>	<b>6.3</b>	<b>20.1</b>	<b>23.6</b>	<b>27.9</b>	<b>12.9</b>	<b>13.4</b>	<b>0.0</b>	<b>104.2</b>	<b>0.0</b>	<b>104.2</b>
<b>SECTOR</b>										
<b>SUBTOTALS</b>	<b>342.4</b>	<b>54.0</b>	<b>42.7</b>	<b>40.0</b>	<b>20.6</b>	<b>14.9</b>	<b>0.3</b>	<b>515.0</b>	<b>(19.8)</b>	<b>495.2</b>
Con/Mod	95.9	-	-	-	-	-	-	95.9	(95.9)	0.0
<b>SUBTOTAL W/ CON/MOD</b>	<b>438.3</b>	<b>54.0</b>	<b>42.7</b>	<b>40.0</b>	<b>20.6</b>	<b>14.9</b>	<b>0.3</b>	<b>610.9</b>	<b>(115.7)</b>	<b>495.2</b>
<b>LOAD REDUCTION FROM BLDG. CODES</b>										
Residential	59.0	10.3	8.7	8.8	8.2	8.2	8.4	111.6	0.0	111.6
Commercial	10.8	4.6	5.9	6.5	4.9	6.2	4.5	43.4	0.0	43.4
<b>Improved Bld Codes</b>	<b>69.8</b>	<b>14.9</b>	<b>14.6</b>	<b>15.3</b>	<b>13.1</b>	<b>14.4</b>	<b>12.9</b>	<b>155.0</b>	<b>0.0</b>	<b>155.0</b>
<b>Market Transformation</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>4.0</b>	<b>5.0</b>	<b>9.0</b>	<b>0.0</b>	<b>9.0</b>
<b>TOTAL HISTORICAL</b>										
<b>CONSERVATION</b>	<b>508.1</b>	<b>68.9</b>	<b>57.3</b>	<b>55.3</b>	<b>33.7</b>	<b>33.3</b>	<b>18.2</b>	<b>774.9</b>	<b>(115.7)</b>	<b>659.2</b>

# BPA'S Historical Conservation Savings

## FY 1982 - FY 2000

### NOTES ON TABLE C:

- ACHIEVED SAVINGS: Reported average megawatt (aMW) savings *are first year savings only* and not the true measure life or program life savings. Measure life is the estimated median time a measure will remain in place, or whenever the structure in which a measure is installed ceases to exist.
- ADJUSTED SAVINGS: The adjusted savings reflect, in some cases, the end of a measure life when BPA assumes the measures are no longer producing savings. In addition, the adjusted savings may reflect findings from evaluations that show savings are more or less than expected when the program was initiated.
- LINE LOSS: Reported savings include transmission and distribution line-loss credit savings of 7.5 percent for direct acquisition programs and 2.5 percent for ConMod. This adjustment is made to account for transmission and distribution line losses avoided through the acquisition of conservation. The line loss credit has been adjusted to 7.625 percent for FY 2006 and beyond.

During the transmission and distribution of electricity, a certain amount of electricity is lost due to electrical resistance inherent in conductors. Since conservation causes less electricity to be consumed by the end-uses, less electricity is generated and transmitted and, therefore, less electricity is lost. BPA credits its conservation with the line-loss savings. This adjustment allows conservation and generation savings to be compared from the same point in the electrical system often referred to as the “busbar.”

- FUEL CHOICE:<sup>9</sup> In 1993, BPA analyzed the following programs for possible fuel switching effects: Residential Weatherization, Manufactured Housing Acquisition Program (MAP), New Residential, Energy Smart Design (ESD), and Water Heating. These analyses concluded that the Residential Weatherization program had no fuel choice effect and only a modest effect on the Water Heating program.

However, a fuel choice effect was found in the New Residential sector and MAP. This analysis concluded that the 1993 new residential program incentives from Long Term Super Good Cents (LTSGC), Super Good Cents (SGC), Washington State Energy Code and/or Northwest Energy Code, and the MAP program do affect fuel choice. The report states that the incentives paid to build energy efficient electrically-heated homes throughout the region appear to be causing approximately 8 percent of the certified LTSGC homes and 6 percent of the new manufactured homes to be built using electricity when, absent the incentives, natural gas would have been the preferred fuel. The fuel choice impacts noted in the report are the result of builders responding to the available incentives from all the programs in their area.

---

<sup>9</sup> Fuel choice effects occur when a consumer decides to change fuel sources from what would have been done absent the program. Of concern here is a decision to stay with electricity due to the increased efficiency when the consumer may have decided to use natural gas or another fuel instead.

In the Commercial Sector, a similar fuel choice impact was found in the ESD program where analysis concluded that incentives did effect fuel choice decisions for HVAC equipment and water heating units. The incentives resulted in unintended fuel choice effects that accounted for 3 percent of the program savings occurring because the participants selected electricity instead of natural gas. The above fuel choice effects are incorporated into the program savings for LTSGC, MAP, and ESD.

- **BUILDING CODES:** Building Code savings are a result of new building codes that were passed in 1985 and MCS (or codes close to MCS) that were implemented in Washington in 1991 and in Oregon, Idaho, and Montana in 1992. Commercial MCS were implemented in Washington in 1994 and in Oregon in 1996. Savings from building codes and MCS are estimated through a backward-looking methodology in the load forecast and, therefore, are only approximate.

Residential Code savings from 2003 forward are no longer counted. Commercial Code savings are not counted as of 2005, since it is likely that codes would have reached current standards by now. In 2003, Idaho adopted a code equivalent to the 1988 MCS. Oregon and Washington codes have gone beyond MCS at this point, and current practice in Montana appears to be equivalent to the MCS. Although the national energy codes and international energy codes upon which Idaho codes were finally based may have been influenced by MCS efforts in the Pacific Northwest, it is appropriate to stop counting additional new benefits due to BPA's efforts in the 1980s and 1990s.

## **Total BPA Conservation Costs**

### TABLES D & E

BPA spent approximately \$2.2 billion on conservation efforts from FY 1982 – FY 2006. Acquisition expenditures were:

- Residential: \$1.1 billion;
- Commercial: \$415 million;
- Industrial: \$188 million (includes \$48 million for ConMod);
- Agricultural: \$34 million;
- Multisector acquisitions: \$157 million; and
- Conservation support and other costs count for an additional \$282 million.

**TABLE D: Total BPA Conservation Costs Dollars (\$000's)**

	1982-2000	2001	2002	2003	2004	2005	2006	Totals
<b>RESIDENTIAL:</b>								
State Low Income Weatherization		\$3,103	\$2,429	\$3,745	\$2,474	\$3,817	\$4,065	\$19,633
C&RD Low Income Weatherization		\$70	\$1,379	\$1,321	\$1,197	\$990	\$254	\$5,211
CRC Low Income Weatherization		\$0	\$0	\$0	\$0	\$0	\$60	\$60
Conservation Augmentation		\$2,694	\$8,526	\$3,050	\$2,883	\$2,434	\$2,438	\$22,025
Conservation Acquisition		\$0	\$0	\$0	\$0	\$0	\$228	\$228
Savings with a Twist		\$0	\$0	\$0	\$0	\$0	\$906	\$906
Conservation & Renewables Discount		\$6,238	\$24,112	\$18,989	\$16,384	\$14,901	\$5,965	\$86,589
Conservation Rate Credit		\$0	\$0	\$0	\$0	\$0	\$802	\$802
<b>Residential Total</b>	<b>\$1,006,407</b>	<b>\$12,105</b>	<b>\$36,446</b>	<b>\$27,105</b>	<b>\$22,938</b>	<b>\$22,142</b>	<b>\$14,718</b>	<b>\$1,141,861</b>
<b>COMMERCIAL:</b>								
Conservation Augmentation		\$747	\$14,603	\$15,142	\$13,259	\$9,713	\$9,157	\$62,621
Conservation Acquisition		\$0	\$0	\$0	\$0	\$0	\$502	\$502
Conservation & Renewables Discount		\$695	\$2,534	\$5,850	\$1,564	\$920	\$1,435	\$12,998
Conservation Rate Credit		\$0	\$0	\$0	\$0	\$0	\$228	\$228
New Initiatives		\$0	\$0	\$92	\$6	\$0	\$0	\$98
<b>Commercial Total</b>	<b>\$338,550</b>	<b>\$1,442</b>	<b>\$17,137</b>	<b>\$21,084</b>	<b>\$14,829</b>	<b>\$10,633</b>	<b>\$11,322</b>	<b>\$414,997</b>
<b>INDUSTRIAL:</b>								
Conservation Augmentation		\$258	\$4,864	\$5,571	\$2,904	\$2,974	\$4,095	\$20,666
Conservation Acquisition		\$0	\$0	\$0	\$0	\$0	\$284	\$284
Conservation & Renewables Discount		\$106	\$1,676	\$3,014	\$1,822	\$941	\$2,265	\$9,824
Conservation Rate Credit		\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Industrial Total</b>	<b>\$108,691</b>	<b>\$364</b>	<b>\$6,540</b>	<b>\$8,585</b>	<b>\$4,726</b>	<b>\$3,915</b>	<b>\$6,644</b>	<b>\$139,465</b>
<b>CON/MOD</b>	<b>\$48,140</b>							<b>\$48,140</b>
<b>AGRICULTURAL:</b>								
Conservation Augmentation		\$0	\$16	\$36	\$0	\$0	\$100	\$152
Conservation Acquisition		\$0	\$0	\$0	\$0	\$0	\$201	\$201
Irrigation Rate Mitigation Product			\$121	\$166	\$92	\$547	\$267	\$1,193
Conservation & Renewables Discount		\$1,452	\$953	\$697	\$518	\$119	\$85	\$3,824
Conservation Rate Credit		\$0	\$0	\$0	\$0	\$0	\$74	\$74
<b>Agricultural Total</b>	<b>\$28,946</b>	<b>\$1,452</b>	<b>\$1,090</b>	<b>\$899</b>	<b>\$610</b>	<b>\$666</b>	<b>\$727</b>	<b>\$34,390</b>
<b>MULTI-SECTOR:</b>								
Conservation Augmentation		\$0	\$184	\$0	\$56	\$96	\$99	\$435
Conservation Acquisition		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Conservation & Renewables Discount		\$0	\$223	\$485	\$290	\$140	\$0	\$1,138
Conservation Rate Credit		\$0	\$0	\$0	\$0	\$0	\$286	\$286
<b>Multi-Sector Total</b>	<b>\$155,565</b>	<b>\$0</b>	<b>\$407</b>	<b>\$485</b>	<b>\$346</b>	<b>\$236</b>	<b>\$385</b>	<b>\$157,424</b>
<b>SUBTOTAL</b>	<b>\$1,686,299</b>	<b>\$15,363</b>	<b>\$61,620</b>	<b>\$58,158</b>	<b>\$43,449</b>	<b>\$37,592</b>	<b>\$33,796</b>	<b>\$1,936,277</b>

**TABLE D, continued**

	1982-2000	2001	2002	2003	2004	2005	2006	Totals
Market Transformation		\$9,600	\$7,750	\$9,300	\$9,700	\$8,000	\$10,150	\$54,500
C&RD Expense (Includes Donations/Admin/IT Development)		\$1,007	\$8,509	\$9,328	\$8,074	\$7,044	\$4,915	\$38,877
CRC Expense (Includes Donations/Admin)		\$0	\$0	\$0	\$0	\$0	\$403	\$403
Energy Web		\$1,450	\$3,200	\$4,300	\$800	\$600	\$0	\$10,350
<b>SUBTOTAL</b>	<b>\$0</b>	<b>\$12,057</b>	<b>\$19,459</b>	<b>\$22,928</b>	<b>\$18,574</b>	<b>\$15,644</b>	<b>\$15,468</b>	<b>\$104,130</b>
<b>CONSERVATION SUPPORT COSTS:</b>								
PBL Conservation Sales/Support (Includes Planning & Evaluation)	<b>\$0</b>	\$650	\$1,100	\$350	\$1,000	\$900	\$650	\$4,650
Conservation Support Expense (Includes Staffing and related expenses)	<b>\$178,113</b>	\$5,550	\$6,850	\$7,250	\$7,450	\$7,250	\$6,950	\$219,413
<b>SUBTOTAL</b>	<b>\$178,113</b>	<b>\$6,200</b>	<b>\$7,950</b>	<b>\$7,600</b>	<b>\$8,450</b>	<b>\$8,150</b>	<b>\$7,600</b>	<b>\$224,063</b>
<b>OTHER COSTS:</b>								
Third Party Financing Costs	<b>\$79,519</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$79,519
Debt Service Payment Adjustment	<b>(\$71,508)</b>	(\$4,079)	(\$4,160)	(\$5,273)	(\$5,295)	\$0	\$0	(\$90,315)
Various Costs Adjustment (e.g. Bond Transaction Costs)	<b>(\$31,748)</b>	\$0	\$0	(\$3,371)	\$0	\$0	\$0	(\$35,119)
<b>SUBTOTAL</b>	<b>(\$23,737)</b>	<b>(\$4,079)</b>	<b>(\$4,160)</b>	<b>(\$8,644)</b>	<b>(\$5,295)</b>	<b>\$0</b>	<b>\$0</b>	<b>(\$45,915)</b>
<b>Total Incremental Costs</b>		<b>\$29,541</b>	<b>\$84,869</b>	<b>\$80,042</b>	<b>\$65,178</b>	<b>\$61,386</b>	<b>\$56,864</b>	
<b>With Carryover from 1996 Table</b>		<b>\$1,840,675</b>	<b>\$1,870,216</b>	<b>\$1,955,085</b>	<b>\$2,035,127</b>	<b>\$2,100,305</b>	<b>\$2,161,691</b>	
<b>Total Cumulative Costs</b>	<b>\$1,840,675</b>	<b>\$1,870,216</b>	<b>\$1,955,085</b>	<b>\$2,035,127</b>	<b>\$2,100,305</b>	<b>\$2,161,691</b>	<b>\$2,218,555</b>	

**TABLE E: BPA Energy Conservation Costs 1982 – 2000 Dollars (\$000's)** <sup>10</sup>

Fiscal Year	Residential	Commercial	Industrial	Con/Mod	Agricultural	Multi-Sector Acq.	Program & Support Costs	Third Party Financing Costs	Debt Service Payments Adjustment	Various Costs Adjustment (e.g. Bond Transaction Costs)	Total Incremental Costs	Total Cumulative Costs
1982	\$50,346	\$11,247	\$0	\$0	\$0	\$0	\$5,321	\$0	\$0	\$0	\$66,914	\$66,914
1983	\$162,114	\$39,892	\$1,409	\$0	\$895	\$0	\$2,689	\$0	\$0	\$0	\$206,999	\$273,913
1984	\$57,374	\$8,656	\$513	\$0	\$1,309	\$0	\$7,242	\$0	\$0	\$0	\$75,094	\$349,007
1985	\$77,907	\$26,553	\$957	\$0	\$2,098	\$0	\$20,232	\$0	\$0	\$0	\$127,747	\$476,754
1986	\$79,898	\$13,007	\$1,013	\$0	\$3,546	\$0	\$7,458	\$2,125	(\$2,048)	\$0	\$104,999	\$581,753
1987	\$60,651	\$7,546	\$2,233	\$0	\$1,918	\$0	\$11,008	\$4,250	(\$2,047)	(\$10,000)	\$75,559	\$657,312
1988	\$40,979	\$14,144	\$3,297	\$1,881	\$2,166	\$3,950	\$8,483	\$4,250	(\$2,045)	(\$10,000)	\$67,105	\$724,417
1989	\$37,269	\$15,467	\$5,889	\$4,726	\$1,428	\$3,000	\$5,479	\$4,250	(\$2,048)	(\$11,748)	\$63,712	\$788,129
1990	\$40,016	\$18,062	\$5,681	\$6,063	\$1,428	\$3,232	\$3,515	\$2,125	(\$2,043)	\$0	\$78,079	\$866,208
1991	\$49,808	\$19,554	\$6,181	\$6,254	\$3,257	\$2,959	\$3,495	\$0	(\$1,983)	\$0	\$89,525	\$955,733
1992	\$80,949	\$25,334	\$8,397	\$4,553	\$2,593	\$6,673	\$4,134	\$0	(\$1,986)	\$0	\$130,647	\$1,086,380
1993	\$89,241	\$32,485	\$13,899	\$4,179	\$2,187	\$7,944	\$8,119	\$0	(\$1,905)	\$0	\$156,149	\$1,242,529
1994	\$77,726	\$45,764	\$22,383	\$6,462	\$2,617	\$17,133	\$8,210	\$6,212	(\$6,453)	\$0	\$180,054	\$1,422,583
1995	\$49,783	\$23,061	\$17,346	\$4,045	\$1,712	\$26,676	\$7,915	\$12,824	(\$7,408)	\$0	\$135,954	\$1,558,537
1996	\$29,071	\$13,540	\$9,839	\$4,595	\$1,227	\$34,330	\$7,863	\$12,824	(\$7,483)	\$0	\$105,806	\$1,664,343
1997	\$10,744	\$7,770	\$3,988	\$2,744	\$338	\$16,373	\$13,700	\$12,624	(\$7,305)	\$0	\$60,976	\$1,725,319
1998	\$5,767	\$10,495	\$3,764	\$2,358	\$173	\$12,857	\$19,200	\$12,023	(\$7,670)	\$0	\$58,967	\$1,784,286
1999	\$4,233	\$5,888	\$1,902	\$280	\$49	\$20,438	\$13,500	\$6,012	(\$11,637)	\$0	\$40,665	\$1,824,951
2000	\$2,531	\$85	\$0	\$0	\$5	\$0	\$20,550	\$0	(\$7,447)	\$0	\$15,724	\$1,840,675
<b>Total</b>	<b>\$1,006,407</b>	<b>\$338,550</b>	<b>\$108,691</b>	<b>\$48,140</b>	<b>\$28,946</b>	<b>\$155,565</b>	<b>\$178,113</b>	<b>\$79,519</b>	<b>(\$71,508)</b>	<b>(\$31,748)</b>	<b>\$1,840,675</b>	

<sup>10</sup> Program and program support costs includes the overhead costs of the Energy Efficiency Group and other conservation support costs.

## **NOTES ON TABLES D & E:**

The costs in the tables are “accrued” expenditures – the amount actually invoiced in a given year. The expenditures reported have been “loaded” to include all direct costs (measure costs, installation, administrative, and program evaluation costs) related to conservation, indirect costs associated with BPA’s Energy Efficiency Program (load forecasting, planning, and economic analysis) and a share of other corporate overhead. The costs reported in the table do not include interest expense on conservation borrowing.

BPA’s historical conservation costs have not always been reported consistently from year to year. Prior to 1988, costs were allocated to specific sectors and to resource planning. Starting in 1988, some resource planning costs were allocated to specific sectors. In addition, two new cost categories were created: multisector acquisitions and miscellaneous costs. (Misc. costs have now been replaced with other categories.)

Although this change in categories makes it difficult to do a year-by-year comparison of sector costs, the change more accurately reflects expenditures. Multisector acquisitions cover more than one sector and include costs for billing credits, competitive acquisitions, and financial and technical assistance programs. Program and support costs are not sector specific and consist of resource planning costs and various overhead costs associated with conservation activity through FY 1986. Program and support costs shown in FY 1996 are costs related to the new Energy Efficiency organization. In FY 1995, BPA was reorganized and also implemented a new accounting system. This resulted in some changes in how costs were accounted for and reported. Every attempt was made to allocate the appropriate costs to the correct categories.

BPA has performed a thorough review of conservation costs. Third party costs have been realigned to show them consistent with Federal Treasury borrowing (capital costs) which are tracked as the money is spent. Third party financing costs have been reassigned to the first five years after the bonds proceeds were made available.

---

**SPECIAL NOTE:**

To get an estimate of per-unit conservation costs, it is tempting to divide the dollars in Tables D and E by the energy savings in Tables A, B or C. This would supposedly yield an “average cost per megawatt”. While this may seem useful, BPA generally considers this to be an inappropriate way to measure resource costs. First, this method of estimation does not take into consideration the varying lifetimes and characteristics of energy resources. For example, 1 aMW of energy savings from a new residential building code program having an expected lifetime of 70 years cannot be equated with 1 aMW of savings from a program having a much shorter life.

Secondly, the simple division method is inappropriate because:

- Some savings were achieved in Pay for Performance or Competitive Acquisition contracts. These savings are reported as first year savings while the cost is paid from year-to-year expense budgets over a number of years.
- Most savings were paid for from the capital budget and costs were amortized through federal borrowing. Our cost for these projects shows up as the capital cost and not the year-to-year amortization payments. The way we treat savings, therefore, is consistent year-to-year while the costs are a mixture of predominantly capital with a substantial expense component.

The cost tables make no distinction between capital and expense payments. This means not all year-to-year costs can be directly compared to any single year savings reported.

---

# GLOSSARY

aMW:	Average megawatts (aMW) refers to a unit of energy output over a year, equivalent to the energy produced by the continuous operation of one megawatt of capacity over a period of time; also an average of one million watts transferred over a period of time (often a year, thus average annual megawatts). One aMW is the equivalent of 8,760,000 kWh (24 hrs/day*365 days/year*1000).
Billing Credit	Adjustment to the BPA customer's electric power bill or the equivalent cash payment for a reduction in the customer's net requirement of capacity and energy purchased from BPA resulting from a conservation activity independently undertaken.
CAA:	Conservation Acquisition Agreement (CAA) is a resource acquisition contract with utility customers intended to reduce BPA's load obligation through mechanisms for delivering energy savings.
C&I:	This refers to the Commercial and Industrial (C&I) sectors and programs that serve both sectors.
C&RD:	The Conservation and Renewable Discount (C&RD) was a component of BPA's 2002 Wholesale Power Rates. C&RD is a credit that was available to BPA's regional wholesale power customers that took action to further conservation and renewable resource development in the region.
CFL:	Compact fluorescent bulb. This refers to an energy efficient electric light used primarily in residential applications. A CFL is a fluorescent bulb that normally can be screwed into any standard lighting fixture. Some models can only be screwed into special fixtures designed to insure the lights are not replaced with inefficient incandescent light bulbs.
Competitive Acquisition:	BPA's process of soliciting and selecting conservation and generating resources from customers and non-customers for long-term use by means of systematic criteria.
ConAug:	Conservation Augmentation (ConAug) was a resource acquisition component of BPA's system augmentation effort intended to reduce BPA's load obligation through mechanisms for delivering energy savings.
ConMod:	Conservation Modernization (ConMod) was a legacy conservation program designed to save energy in the Northwest aluminum industry. The program was designed to save energy by offering a 5-mill incentive for every kWh of energy saved to produce one pound of aluminum.
Conservation	Conservation means any reduction in electric energy consumption resulting from an increase in the efficiency of electric energy use, production, or distribution, the direct application of a renewable resource, or by modifications in consumer behavior that decrease energy consumption.
Conservation activity	A project or program deemed as a conservation effort.
Consumer-owned utility	Consumer-owned utility can include a municipal electric utility, a public utility district, an irrigation district, a cooperative, a mutual corporation or association that is engaged in the business of distributing electricity to one or more retail electric customers.
CRC:	The Conservation Rate Credit (CRC) is a component of BPA's Wholesale Power Rates. CRC is a credit that is available to BPA's regional wholesale power customers that take action to further conservation development in the region.
CREUS:	The Commercial and Residential End Use Study provided electric energy usage information on various types of loads typically found in either commercial or residential buildings. Businesses and homes were randomly selected throughout the region and various end use loads were monitored for several months. The data was collected and analyzed. A few businesses installed some measures during 1989 based on the energy use data.
Direct Acquisition:	Programs that pay for energy efficiency measures that result directly from actions taken, such as installing measures, rather than by paying someone for activities like code enforcement or other programs that indirectly cause conservation to occur. Acquisition is a term from the Regional Act used in where conservation activity is equivalent to, and as reliable as, acquiring actual generation-produced energy. Under the Regional Act, acquisition of energy, whether through conservation or through generation, must be done under contracts that allow for rigorous verification.
Directly Served Customer	Direct-service industries and also federal agencies that buy electricity from BPA for their own use.

Direct Service Industries (DSI)	Industrial customers, primarily aluminum smelters, which purchase power directly from BPA.
Energy Conservation Measures (ECMs):	Materials or equipment installed or activities implemented to produce electric energy savings. A specific action or installed device that saves energy. Also referred to as a conservation measure.
Energy Savings Plan (ESP):	A conservation program that acquired energy savings specifically from conservation projects in the industrial sector.
ESD:	Energy Smart Design (ESD) was a conservation program initially designed to award builders for significant savings features in new commercial buildings. It eventually became a standard design program to increase efficiency above codes and to change building practices to bring about codes enforcing higher building efficiency standards.
ESO	This stands for the Expanded Standard Offer (ESO) for commercial and industrial lighting under ConAug that was based upon set payments for specific lighting measures that save energy above standard lighting practices.
ESP:	Energy Savings Program (ESP) was a legacy conservation program that provided incentives for improvements in energy efficiency in industrial processes (other than in the aluminum industry, i.e., ConMod). This program served both new and existing industries. The program depended upon good audits or design reviews to identify potential cost effective savings. Actual savings and the amount of incentive paid were determined through pre and post metering for existing industrial processes or between estimated use and actual metered use in new industrial plants.
Federal	A key principle in federal is that BPA funds must produce incremental conservation that would otherwise not be delivered. In late January 2001, BPA began to develop load reduction projects at federal properties in Pacific Northwest load following service areas.
Finance CIPP	Commercial Incentive Pilot Program (CIPP) was a payment for performance endeavor under BPA sponsorship that provided financial reimbursement to utilities for energy conservation measures installed by commercial customers.
First Year Savings:	Most BPA programs are reported in terms of the savings that occur in one year's time although the cost effectiveness of measures is based on the expected life of the measure. Measures often last 10, 20 or more years. Therefore, total savings are calculated by multiplying the first year savings times the measure life.
Fiscal Year (FY)	A twelve-month accounting period used by the BPA that runs from October 1 to September 30.
Flex Agreements:	Contracts with utilities to use money "flexibly" from one program or sector to another without seeking approval on each change. This provided utilities with the opportunity to move funds provided by BPA from one sector to another where there were cost-effective opportunities to achieve without going through an approval process. The program required that the average cost per kWh saved would be equal to or less than the average cost for conservation were it allocated out into the various individual programs that were available to the utilities. For example, residential weatherization costs more than industrial, so if the utility increased expenditures on residential above the allocated budget, it had to find other less costly kWh savings or repay the difference to BPA.
Fuel Choice:	A possible unintended result that a consumer might choose to use electrical energy rather than gas or another fuel due to incentives for energy efficiency measures for electrically heated homes or electrical industrial and commercial uses.
HVAC:	Heating, ventilation and air conditioning systems (HVAC) include furnaces, ducts, air control system filters, baffles, motors, vents, sensors and chillers. These systems present many efficiency improvement opportunities. HVAC systems are found in houses and industrial facilities, but the primary use of the term is associated with cooling, heating and venting of air within large commercial structures.
Incremental Savings:	BPA conservation funding is to be used by BPA customers for energy efficiency savings and related activities beyond what they are required by law and/or regulatory requirements to accomplish, i.e., incremental savings.
Investor-owned utility (IOU)	Investor-owned utility is a corporation owned by investors that meets the definition of electrical company that is engaged in distributing electricity to more than one retail electric customer.

IRLC:	Invitation to Reduce Load through Conservation refers to ConAug contracts that utility customers began signing in FY 2001. Various energy conservation measures are authorized for installation through the IRLC portion of contracts. The umbrella contract for each utility is a Purchase of Conservation Agreement (PCA).
IRMP:	The Irrigation Rate Mitigation Product is a rate reduction provided to utilities with large irrigation loads during May through August of the irrigation season. This is the result of a BPA policy to provide support to irrigated agriculture when economic conditions would otherwise cause those loads to decline.
Irrigation Hardware:	Equipment that includes items such as sprinklers, pumping plants, fittings, and mainlines used to reduce operating pressure, and pipeline and pump modifications.
Irrigation Scheduling:	By careful measurement of soils for water content, air temperature, wind speed and other weather information, irrigation can be planned (scheduled) in such a way that crop growth is optimized and water use reduced. Using less water saves electricity because less water must be pumped up to the fields and forced through irrigation systems.
Legacy:	Legacy refers to the conservation activities started prior to the year 2000 that are still operating. These include Low-Income Weatherization”, the Energy Northwest pay-for-performance contract, the Tacoma Fort Lewis program and some others with minor savings impacts.
Line Loss:	The electric energy lost (dissipated) in transmission and distribution lines. Varies with the current (amperes) of the line.
Load-following	Load-following generally refers to automatic adjustments in generation which follow changes in customer load in order to maintain a continuous balance between loads and generation.
Long-Term Super Good Cents:	The final version of the New Residential Construction program that was designed to save energy and to influence code development. Long-term refers to the fact that this program was increased above the existing code standards and was to be available for some years after codes were achieved.
Low-Income	Low-income means household income that is at or below 125 percent of the federal poverty level.
Low-Income Residential Weatherization (States)	Weatherization of the residences of low-income households helping conserve energy resources in states and reducing the need to obtain energy from more costly conventional energy resources. The program mitigates the rising energy costs that make it difficult for low-income citizens to adequately heat their homes.
LSO	Limited Standard Offer (LSO) was the first Standard Offer made to utilities within the ConAug program. It provided incentives for commercial buildings based upon set payments for specific lighting measures that saved energy above standard lighting practices.
MAP:	Manufactured Home Acquisition Program (MAP) required Super Good Cents building standards certification at the manufactured home factory. A site “set-up” inspection followed factory certification in many instances..
Major Plants	Energy conservation projects that involved industrial plants with significant electric loads. The top 100 industrial energy users were targeted for this program.
Market Transformation:	A program designed to cause new technologies to be built or accepted as standard practice. Super Good Cents is an example of a program designed to change the home building standards and the market.  Market Transformation now refers to a specific programmatic effort operated through the Northwest Energy Efficiency Alliance, which receives 40 percent of its funding from BPA.
Mill	A unit of monetary value equal to 1/10 of a cent, or 1/1,000 of a dollar.
MCS:	Model Conservation Standards (MCS). These standards were called for in the Regional Act. The Northwest Power and Conservation Council, a policy group authorized through the Regional Act to set standards and plan for future conservation and power acquisition, and BPA worked together to set the Model Conservation Standards and to encourage utilities to create programs to begin promoting such standards. MCS was designed as an early step in Energy Efficiency Code Standards which three of the four Northwest states served by BPA eventually adopted.
Multisector:	Multisector is a catch-all term for a “pseudo sector” that makes no sector distinctions for applications through which the energy savings are achieved.

ODOE - Schools	BPA's support of the Oregon Department of Energy (ODOE) program for conservation assistance for schools.
Payment for Performance	Mechanism through which payments were made over time as energy savings were verified. This mechanism gave utilities the autonomy they wanted and builds their capability to be a reliable source of conservation.
PECI	PECI consults with clients to achieve long-term energy savings through market transformation education and incentive programs that build demand for more efficient products and services.
PSP&L (PSE):	Former name of Puget Sound Energy, an IOU that serves some of the load in the Puget Sound region of Washington.
Sector:	Sector in the energy world refers to a segment of a market, such as residential, commercial, industrial and agricultural end-users. Each sector employs a different approach and program design specific to its contents.
Super Good Cents:	See listing for Long-Term Super Good Cents.
SWAT:	Savings with a Twist™ is designed to help transform markets in rural areas by encouraging consumers to buy compact fluorescent lights (CFL). SWAT is a buy-down program that involves manufacturers. SWAT-discounted CFLs are sold at retail stores throughout the Pacific Northwest through seasonal campaigns, typically fall/winter.
System Efficiencies	System Efficiencies refers to transmission line and transformer improvements that save energy, such as lower loss transformers (silicon core), reconductoring distribution lines with higher voltage, and conservation voltage reduction, which lowers the voltage on distribution lines, and saves energy during low load time periods.
Targeted Acquisition:	A contract that provided flexibility to determine the pace of a utility's delivery of conservation and to select the type of conservation produced.
Targeted Acquisition Process (TAP)	Local utilities create and offer commercial conservation programs for their customers and BPA purchases verified energy savings.
TAS's Tech. Assist. Info.	Technical Assistance Information was provided by the various state energy offices for the Institutional Program (primary and secondary schools). This was a DOE sponsored effort with support from BPA and the states.
Third Party Financing:	A financial arrangement between BPA and other entities to use sources of capital other than BPA's borrowing authority from the US Treasury or congressional appropriations to fund new capital assets.
Utility	In this document, "utility" refers to an electric utility that is either consumer-owned or investor-owned.
VendingMiSer®:	A program to install energy savings controllers that cycle vending machines off and on during times in which usage has been minimal. The on/off cycle maintains the quality of the products sold (e.g., products needing refrigeration).
Water/Waste Water	BPA began this program in March 2001 to make the water/wastewater (WWW) treatment process more energy efficient. Plants in locations served by load-following customers were eligible. WWW facilities are one of the largest energy users in a community.
Weatherization	Modifying a building envelope to reduce energy consumption for heating or cooling. Weatherization measures include adding insulation, installing storm windows and doors, caulking cracks and adding weather stripping.